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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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07/21/2001

Itzhak Gurantz

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2398

77676

7590

10/20/2008

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EXAMINER

CHOWDHURY, SUMAIYA A

ART UNIT

PAPER NUMBER

2421

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DELIVERY MODE

10/20/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/910,412	Applicant(s) GURANTZ ET AL.	
	Examiner SUMAIYA A. CHOWDHURY	Art Unit 2421	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5, 18 and 23-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5, 18, 23-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/28/08 has been entered.

Response to Arguments

2. Applicant's arguments filed 7/28/08 have been fully considered but they are not persuasive.

(a) Applicant argues "...none of the cited references teach a filter that reflects signals back into a splitter in order to allow terminals coupled to the tap ports...within a network to communicate directly with one another." on page 6, 4th paragraph of the remarks filed 7/28/08.

The Examiner disagrees. Fig.2 in Kliger illustrates the demarcation point unit 14 which reflects incoming signals from various devices in a home network. The demarcation point unit 14 consists of three main components; namely, splitter 24', DIP 40, and HRU 44. Kliger provides a block diagram of the HRU 44 in Fig. 2A. When a first device 33 in one room needs to communicate with a second device 33 in a second room, the first device 33 sends an upstream signal to the demarcation point unit 14. Once the upstream signal enters the demarcation point unit 14, it passes through

Art Unit: 2421

diplexer 42, and is then band pass filtered by BP filter 46, amplified by amplifier 50, and RF down-converted by down-converter 54 to an intermediate frequency (paragraph [0055]). The IF filter and amplifier unit 58 then amplifies and band pass filters the IF signal. The RF up-converter 56 shifts the frequency of the IF signal up to the downstream frequency band. The amplifier 52 and BP filter 48 then amplify and filter the downstream signal. This downstream signal then passes back to the backbone 20 of the home network 10. This allows the devices 30 to communicate with each other by issuing messages to the backbone 20. The HRU 44 receives the upstream signal, amplifies and shifts the RF frequency to the backbone 20 as the downstream signal. The HNMs 28 then receive the messages in the downstream signal from the backbone 20 – (paragraph [0056]). In other words, HRU 44 in the demarcation unit 14 performs the function of the filter as recited in claim 1 which reflects incoming upstream signals from devices 33 to other devices over a home network.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2421

4. Claims 5, 23, 25-27, and 28-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Kliger (US 2002/0069417)

Note: Information relied on from Kliger can be found in provisional applications 60/229263 and 60/275060

As for claim 5, Kliger teaches a signal distribution network comprising:

a filter (44 – fig. 2) located at the point of entry of a building tuned to reflect network signals originating in the building back into the building – (HRU 44 is located within demarcation point unit 14 which is located at the point of entry of the building. [0055], [0056]).

at least one signal splitter (24'), the signal splitter having a common port (fig. 2; port between splitter 24' and DIP 40) and a plurality of tap ports (fig. 2; ports between splitter 24' and coax wires 22), the common port of the signal splitter being coupled to the filter – (Referring to fig. 2, splitter 24' is connected to filter 44 via DIP 40. [0051], [0056]); and

a plurality of terminal devices (33), each terminal device being coupled to a tap port of at least one signal splitter (Referring to fig. 1, terminal devices 33 are connected to splitter 24' via a tap port), at least one of the terminal devices (modem 114) providing frequency bins with more transmit bits which occupy parts of the channel where the signal to noise ratio (SNR) is high – (Higher data rates are achieved for a specific

Art Unit: 2421

frequency band which produces less cross talk (high SNR) between potentially interfering signals [0073]);

wherein the reflections from the filter provide a path for terminal devices back through the tap port of the signal splitter and out each other tap port to transmit signals to other terminal devices thus allowing terminal devices to communicate directly with each other to form the signal distribution network – [0048], [0047], [0050], [0055], [0056];

As for claims 23 and 26, Kliger teaches wherein the signal modulation used by the terminal devices is OFDM and the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter – [0073].

As for claim 27, Kliger teaches wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter [0057]-[0059].

Claim 25 contains the limitations of claims 5 and 24 and are analyzed as previously discussed with respect to those claims.

As for claim 28, Kliger teaches the claimed limitations. In particular, Kliger teaches the frequency used for communicating is above the cable television band – ([0052]; provisional application 60/275,060).

5. Claims 18, 24, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger as applied to claim 5 above, and further in view of Manssen (5809421).

As for claims 18 and 36, Kliger fails to teach wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

In an analogous art, Manssen teaches wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network— col. 8, lines 30-48, col. 4, lines 9-25.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above mentioned limitation, as taught by Manssen, for the advantage of preventing co-channel interference.

As for claim 24, Kliger teaches wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome

Art Unit: 2421

frequency selective channel impairments caused by the reflections from the filter [0057]-[0059].

6. Claims 29, 30, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger in view of Mukherjee (6226322).

Claim 29 contains the limitations of claims 5 and 25 and is analyzed as previously discussed with respect to those claims. Claim 29 additionally calls for the following:

wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome the communication channel impairments caused by the multipath signals.

In an analogous art, Mukherjee teaches the terminal devices perform equalization on the received signal signal that restores a flat frequency response to overcome the communication channel impairments caused by the multipath signals – col. 8, lines 40-52.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger's invention to include the above mentioned limitation, as taught by Mukherjee, for the advantage of flattening the signal spectrum and compensating for phase distortion.

As for claim 30, Kliger and Mukherjee disclose the claimed limitations. In particular, Mukherjee teaches equalization is frequency domain equalization.

As for claims 33 Kliger teaches wherein the signal modulation used by the terminal devices is OFDM and the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments caused by the reflections from the filter – [0073].

7. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, and Mukherjee as applied to claim 29 above, and further in view of Kapoor (6,396,886).

As for claim 31, Kliger, and Mukherjee fail to teach wherein equalization is time domain equalization.

In an analogous art, Kapoor teaches wherein equalization is time domain equalization that restores a flat frequency response to overcome multipath effects – col. 6, lines 47-63.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Mukherjee's invention to include the above mentioned limitation, as taught by Kapoor, for the advantage of restoring the frequency envelope.

Art Unit: 2421

8. Claims 32, 34, and 35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Ise (6778601).

As for claim 32, Kliger and Mukherjee fail to teach wherein equalization is adaptive .

In an analogous art, Ise teaches wherein equalization is adaptive (see abstract, col. 4, lines 33-47, col. 5, lines 17-27, lines 40-50).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Mukherjee's invention to include the above mentioned limitation, as taught by Ise, in order to inhibit an excessive peak in the filter characteristic.

As for claim 34, Kliger, Mukherjee, and Ise disclose the claimed limitations. In particular, Kliger teaches wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals – [0073].

9. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Mukherjee, and Ise in view of Wu.

As for claim 35, Kliger, Mukherjee, and Ise fail to disclose wherein the terminal devices use forward error correction to recover the transmitted signal without errors.

In an analogous art, Wu teaches wherein the terminal devices use forward error correction to recover the transmitted signal without errors – [0062].

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Mukherjee, and Ise's invention to include the above mentioned limitation, as taught by Wu, for the advantage of recovering the signal without errors.

10. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Mukherjee as applied to claim 29 above, and further in view of Manssen.

As for claim 37, Kliger and Mukherjee fail to teach wherein at least one of the communication channels between terminal devices uses time division duplex protocol for communications and the communications are synchronized by broadcasting a beacon message on the network.

In an analogous art, Manssen teaches sharing the communication channel between locations using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network – col. 8, lines 30-48, col. 4, lines 9-25.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Mukherjee's invention to include the above

Art Unit: 2421

mentioned limitation, as taught by Manssen, for the advantage of preventing co-channel interference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUMAIYA A. CHOWDHURY whose telephone number is (571)272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John W. Miller/
Supervisory Patent Examiner, Art Unit 2421

/Sumaiya A Chowdhury/
Examiner, Art Unit 2421

Application/Control Number: 09/910,412
Art Unit: 2421

Page 12